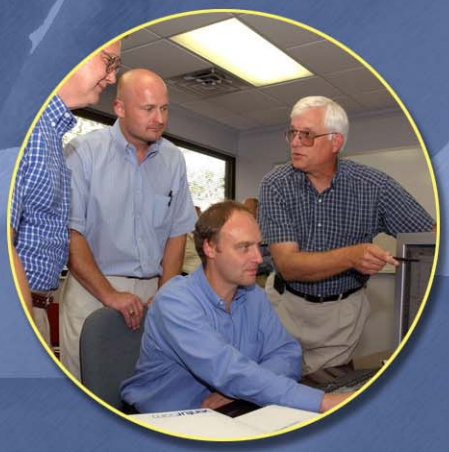
Diskless Technology



Overview

Diskless workstation technology will enhance the capability to perform secure electronic data processing activities. The reduction of removable, write-enabled storage media from workstations will increase computer security and productivity. Security will be improved by eliminating risks associated with removable media containing classified information. Productivity increases will be realized by migrating systems to a more uniform and modern hardware and software environment and reducing the overhead associated with handling and transporting classified media. By removing physical computing security issues from the desktop and providing standardized configuration management, this technology will result in an enterprise-wide secure environment and improved operational effficiency.

Approach

Two viable alternatives to deploying diskless workstation technology at Y-12 have been identified. The first alternative is terminal services and thin clients. The second alternative is Venturcom's BXP Secure remote bootstrap/disk services technology. Both solutions facilitate the deployment of diskless workstations in which all data are stored on remote, secure disk storage. Using these technologies, local input and output devices can be tightly controlled or eliminated, and all network traffic can be encrypted. The diskless workstation can be operated such that no residual information remains on the local workstation when processing is complete. Complete information sanitization is accomplished via power down of the workstation.

Y-12 National Security Complex

For more information, contact:

Jeff Phillips Y-12 National Security Complex
(865) 576-3889 Oak Ridge, Tennessee
phillipsjd@y12.doe.gov
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Terminal Services and Thin Clients

Terminal services is a native component of Windows 2000 Server that allows for secure user connections across an Ethernet network. Thin clients are commercially available network appliances that contain no local disk drive and support a limited number of peripherals. Thin clients are used to establish a full GUI Windows session with a terminal server or cluster of servers. Most Windows NT/2000/XP applications can be fully accessed via a terminal services/thin client session. Because thin clients have no local disk drive and support few peripherals, the risk associated with data theft and the introduction of undesirable elements into the network are greatly reduced. In addition, the deployment of terminal services and thin clients allows for a standardized configuration and centralized configuration control. Terminal services and thin clients are ideal for providing diskless workstations to office and administrative users. All user application processing is done remotely in a nondedicated mode. By March 2004, Y-12 will have more than 400 thin clients in production in the classified environment.

BXP Secure

Workstations requiring dedicated, local, high-performance computing or specialized hardware interfaces are not candidates for thin clients. BXP Secure will allow for the deployment of diskless workstations that provide dedicated resource utilization and physical modification. Diskless BXP Secure workstations will perform all processing locally without relying on a remote, nondedicated server for processing capability. As a result, it will be possible to customize the local workstation's physical configuration to meet the needs of the end user. Diskless BXP Secure workstations will be capable of supporting all hardware and software supported by the Windows 2000/XP operating system. Y-12 has worked extensively with Venturcom to develop BXP Secure and is in the process of deploying the infrastructure to support production client workstations.